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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/466,935	12/20/1999	VITALIY ARKADYEVICH LIVSHITS	0010-1070-0	1750

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EXAMINER	
STEADMAN, DAVID J	
ART UNIT	**PAPER NUMBER**
1656	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/466,935	LIVSHITS ET AL.	
	Examiner	Art Unit	
	David J. Steadman	1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *77-84* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *77-84* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/27/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Application

[1] Claims 77-84 are pending in the application.

[2] Applicant's amendment to the claims, filed on 2/27/07, is acknowledged. This listing of the claims replaces all prior versions and listings of the claims.

[3] Receipt of an information disclosure statement, filed on 2/27/07, is acknowledged.

[4] Applicant's arguments filed on 2/27/07 have been fully considered.

[5] The text of those sections of Title 35 U.S. Code not included in the instant action can be found in a prior Office action.

Information Disclosure Statement

[6] All references cited in the IDS filed on 2/27/07 have been considered by the examiner. A copy of Form PTO-1449 is attached to the instant Office action.

Claim Rejections - 35 USC § 102

[7] The rejection of claims 77-84 under 35 U.S.C. 102(b) as anticipated by Kobayashi et al. (*J Biochem* 98:1007-1016, 1985) as evidenced by Zakataeva et al. (*FEBS Lett* 452:228-232, cited in the IDS filed on 3/31/2000) and Kruse et al. (*Appl Microbiol Biotechnol* 59:205-210) is maintained for the reasons of record and the reasons stated below. The rejection was fully explained in a prior Office action.

RESPONSE TO ARGUMENT: Applicant argues the rejection is obviated by amendment to "recite 3 manipulative steps of the claimed method." According to applicant, the reference of Kobayashi et al. fails to teach recovery of an L-amino acid following the recited steps. Applicant argues it is the medium that is left after removing the solids that is used in step C). Applicant further argues that the step of "purifying" as defined in the specification at p. 23, lines 2-7 is not taught by the method of Kobayashi et al.

Applicant's argument is not found persuasive. According to MPEP 2111.01.I, "[d]uring examination, the claims must be interpreted as broadly as their terms reasonably allow." The examiner acknowledges the amendment to claim 77. However, even in view of the amendment, the reference of Kobayashi et al. would appear to anticipate the claimed method. Kobayashi et al. teaches culturing the bacterial host cell and centrifuging the cells (p. 1009, column 1, bottom), which is undisputed by applicant. By practicing the method of Kobayashi et al., one of ordinary skill in the art would be "removing solids" in accordance with step B) *and* "purifying said L-amino acid" in accordance with step C) simultaneously. Put another way, the step of centrifuging the cells would simultaneously remove solids from the medium and purify the L-amino acid, which is in the cells, from the medium. Alternatively, one can interpret the steps of centrifuging and removing medium from cells as being encompassed by steps B) and C). By centrifuging the cells, one would remove solids including cells from the medium and by removing the medium from the cells, *e.g.,* pouring off the medium from a cell pellet in a centrifuge tube, one would purify the L-amino acid, which is in the cells, from

the medium. As noted in the prior Office action, while it is acknowledged the reference of Kobayashi et al. does not expressly teach the recovery of an L-amino acid, *e.g.,* L-threonine, from the culture medium, this is an inherent step of isolating the cell of Kobayashi et al., which is undisputed by applicant. Because the host cell necessarily produces and contains intracellularly-produced L-threonine, by isolating the host cell from the medium, it follows that one is "purifying said L-amino acid from the medium" in accordance with the claimed method. While applicant argues the step of "purifying" is defined in the specification at p. 23, lines 2-7, this disclosure, *i.e.,* "...and purifying the target amino acid by ion exchange, concentration and crystalline fraction methods and the like," would appear to be non-limiting and interpreting the term "purifying" as being limited to "ion exchange, concentration and crystalline fraction methods" would appear to be improper in view of MPEP 2111.01.II, which states, "it is important not to import into a claim limitations that are not part of the claim."

Claim Rejections - 35 USC § 103

[8] In the interest of compact prosecution, the following rejection is applied in view of an alternative interpretation of amended claim 77. Claim(s) 77-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (*J Biochem* 98:1007-1016, 1985) in view of Georgiou et al. (US Patent 5,508,192) as evidenced by Zakataeva et al. (*FEBS Lett* 452:228-232, cited in the IDS filed on 3/31/2000) and Kruse et al. (*Appl Microbiol Biotechnol* 59:205-210).

The claims are drawn to a method for producing an L-amino acid by: cultivating a bacterium transformed with a DNA that encodes SEQ ID NO:4; removing solids from the medium; and purifying the L-amino acid from the medium from the second active step.

The reference of Kobayashi et al. teaches an *E. coli* host cell transformed with vector pAB104, which comprises a segment of the *E. coli* chromosome, comprising the region between and including genes *pldA* and *pldB* (p. 1012, Figure 4 and p. 1014, Figure 6). Kobayashi et al. teaches culturing this cell to middle exponential phase in LB broth, and isolating the cell from the medium. See p. 1009, left column, bottom.

At the time of the invention, a well-known method of determining the growth phase of *E. coli* was to measure the optical density of a small aliquot, *e.g.,* 1 mL, of a cell culture medium at approximately 600 nm. For example, the reference of Georgiou et al. teaches that middle exponential phase of *E. coli* is reached at an optical density at 600 nm between 0.3-0.4 (column 18, lines 50-53).

The reference of Zakataeva et al. is cited as an evidentiary reference in accordance with MPEP 2131.01 as showing that a characteristic not disclosed in the reference of Kobayashi et al. is inherent. Zakataeva et al. teaches that the *E. coli rhtB* and *rhtC* genes (corresponding to SEQ ID NO:1 and 3, respectively) fall between the *pldA* and *pldB* genes in the genome of *E. coli* (p. 229, Figure 1).

Kruse et al. is cited as an evidentiary reference in accordance with MPEP 2131.01 as showing that a characteristic not disclosed in the reference of Kobayashi et al. is inherent. It is noted that, according to MPEP 2124, a reference can be cited "to

show a universal fact need not be available as prior art before applicant's filing date," which facts "include the characteristics and properties of a material or a scientific truism." Kruse et al. is cited as showing that *E. coli* is an L-threonine producing strain, *i.e., E. coli* is not an L-threonine auxotroph, and that an *E. coli* isolated from a medium comprises intracellularly-produced L-threonine. See particularly p. 205, abstract and p. 207, Figure 2.

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Kobayashi et al. and Georgiou et al. to culture the host cell of Kobayashi et al., remove an aliquot of the culture for measurement of optical density at 600 nm, centrifuge the cells and prepare a cell extract of the harvested cells. One would have been motivated to modify the method of Kobayashi et al. to remove an aliquot of the culture for optical density measurement in order to determine when the cells reached mid-exponential growth phase. One would have a reasonable expectation of success to culture the host cell of Kobayashi et al., remove an aliquot of the culture for measurement of optical density at 600 nm, centrifuge the cells and prepare a cell extract of the harvested cells because of the results of Kobayashi et al. and Georgiou et al. Therefore, claims 77-84, drawn to a method of producing an L-amino acid, would have been obvious to one of ordinary skill in the art at the time of the invention.

As noted above, MPEP 2111.01.I states, "[d]uring examination, the claims must be interpreted as broadly as their terms reasonably allow." In this case, the step of "removing solids including cells from the medium" has been broadly and reasonably interpreted as removing an aliquot of culture medium, which would encompass solids

including cells and the method step of "purifying..." has been interpreted as encompassing harvesting cells and preparing a cell-free extract, which would necessarily result in purifying the intracellularly produced L-amino acid from cellular debris.

Conclusion

[9] Status of the claims:

Claims 77-84 are pending.

Claims 77-84 are rejected.

No claim is in condition for allowance.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Steadman whose telephone number is 571-272-0942. The examiner can normally be reached on Monday to Friday, 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen Kerr Bragdon can be reached at 571-272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David J. Steadman, Ph.D.
Primary Examiner
Art Unit 1656